

ARD-53

2020

Sale and Operation of Residential Wood & Pellet Stoves

Wood smoke contains fine particle matter, carbon monoxide and other organic compounds, such as formaldehyde, benzene and aromatic hydrocarbons, which form from incomplete combustion. The fine particulates of wood smoke, 10 microns or less in diameter (a human hair is approximately 70 microns in diameter), can be inhaled deep into the lungs, collect in tiny air sacs (called alveoli) where oxygen enters the blood, and cause breathing difficulties and sometimes permanent lung damage.

Wood smoke is a particular concern in the winter, when cold, stagnant air and temperature inversions limit air movement. Smoldering fires and short chimneys may cause heavy smoke to stay close to the ground that can cause a neighborhood nuisance and an adverse impact on public health and the environment.

Fortunately, recent advances in wood heater design have resulted in the manufacturing of cleaner-burning wood and pellet stoves. The use of these cleaner-burning stoves, in conjunction with proper operation, can reduce the adverse health and environmental impacts associated with using these devices.



REGULATORY OVERVIEW

Effective February 3, 2015, the U.S. Environmental Protection Agency (EPA) signed into law [40 CFR Part 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters](#).

This regulation specifies that manufacturers can only sell compliant residential-use wood and pellet stoves in the U.S. based on the schedule outlined below, and that you, as an owner, must operate the stove in accordance with the manufacturer's requirements.

The regulation applies these types of wood and pellet stoves:

- Single burn-rate.
- Adjustable burn-rate.
- Fireplace inserts.

MANUFACTURERS AND RETAILER REQUIREMENTS

Effective January 1, 2016

Manufacturers and retailers can only sell stoves that meet the Step 1 Particulate Matter Emission Limit of 4.5 grams per hour of operation.

Effective May 2020

Manufacturers and retailers can only sell stoves that meet the Step 2 Particulate Matter Emission Limit of 2.0 grams per hour of operation.

Permanent labels

Manufacturers must affix a permanent label to wood and pellet stoves indicating that the stove is certified to meet the EPA particulate matter emission standards of either 2015 or 2020 (see above). This label signals to you as a consumer that the stove meets EPA standards.

Operator’s Manuals

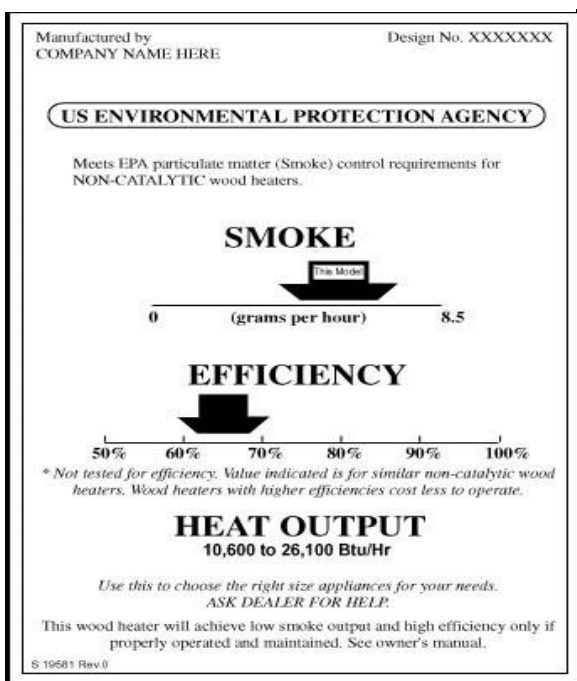
Manufacturers must include in their operator’s manual, the specific operating requirements, fuel types and conditions that will void the manufacturer’s warranty, if not followed.

Hang Tags

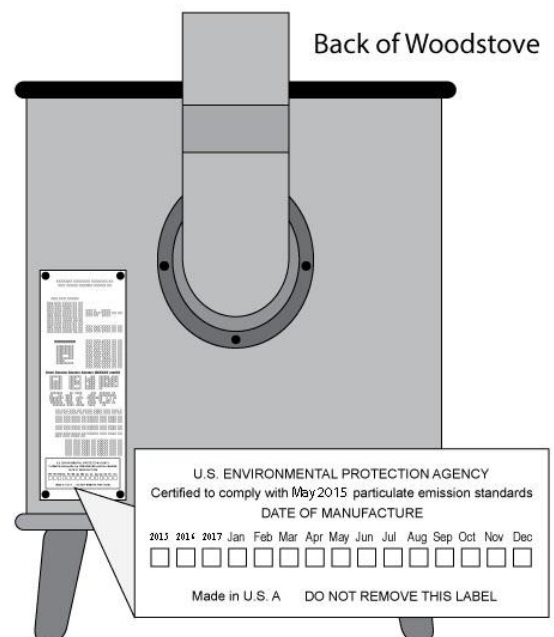
Manufacturers can also voluntarily provide a hang tag to include additional details on emissions and stove efficiency.



Hang Tag Example



Permanent Label Example



OWNER OPERATION REQUIREMENTS

As an owner, you must follow all manufacturer's requirements for operation and maintenance of the wood or pellet stove, and burn only the grades of pellet fuels, wood or wood chips specified in the owner's manual. The regulation requires manufacturers to void any warranty in cases of improper operation, maintenance and burning of improper fuel.

Improper Fuels

Burning the following in a wood or pellet stove is prohibited:

- Residential or commercial garbage.
- Domestic waste (trash)
- Lawn clippings or yard waste.
- Materials containing rubber, including tires.
- Materials containing plastic.
- Waste petroleum product.
- Paints or paint thinners.
- Asphalt products.
- Materials containing asbestos.
- Construction or demolition debris.
- Paper products, cardboard, plywood or particleboard.
- Railroad ties, pressure-treated wood or pallets.
- Manure or animal remains.
- Salt water driftwood or other previously salt water-saturated materials.
- Unseasoned wood (greater than 20% moisture content).
- Any materials that are not included in the warranty and owner's manual for the subject wood heater.
- Any materials that were not included in the certification tests for the subject wood heater.

Proper Cordwood Storage Example



Please note that the use of fire starters made from paper, cardboard, sawdust, wax and similar substances is allowable to kindle the fire within the stove.

COMPLIANCE ASSISTANCE AND ENFORCEMENT

NHDES has taken partial delegation of this rule to assist EPA in compliance assistance and enforcement of this regulation in New Hampshire.

For more information on wood stoves and air quality, contact the NHDES Air Resources Division at (603) 271-1370 or visit the [NHDES website](#).

Other resources for information on wood stoves for residential heating are [UNH Cooperative Extension](#) at and [EPA Burnwise](#) at.